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Foreword

The Enhanced Work Planning (EWP) Initiative has proven itself a valuable tool for helping the Department of Energy (DOE) accomplish its mission "safer, better, faster, and cheaper." Through the EWP initiative, DOE has proven that not only can it conduct work safely, but it can save the taxpayer money at the same time. The EWP initiative has been greeted with enthusiastic endorsements by participants and observers as varied as site contractors; labor representatives; craft workers; DOE officials at all levels, including Secretary Peña; the United States congress; and President Clinton. EWP concentrates on "getting the work done safely, effectively, and efficiently." This initiative is very much in the forefront of reinventing Government and ensuring that "good enough for Government work," again means best in class.

Enhanced Work Planning Definitions

Enhanced Work Planning

Enhanced Work Planning is a process that evaluates and improves the program by which work is identified, planned, approved, controlled, and executed.

"AS-IS"

AS-IS refers to the present condition or status of a process. It means defining how the process currently operates and identifying the process steps, involved organizations/workers, associated documentation, and other factors that affect the operation of the process.

"SHOULD-BE"

SHOULD-BE refers to the changed process after the enhancements have been incorporated. It is sometimes referred to as the "TO-BE" condition.

Benchmarking

In general terms, it refers to a standard by which something can be measured or judged. In relation to EWP, benchmarking means reviewing your current work practices or work processes with practices or processes at other facilities or sites. By noting how other organizations have dealt with similar issues, one can import successful ideas, tools, approaches, and processes for application at your facility.

Core Team

The Core Team is a team of individuals from multiple organizations who apply the EWP principles to baseline current work activities, identify enhancements and improvements, change existing procedures to include enhancements or improvements, and establish Performance Indicators to measure enhancements or improvements.

Enhance

In EWP, enhance means to improve a process to make it operate more effectively and efficiently without reducing quality or decreasing safety. It can mean implementing changes that add steps or components to a process or remove unnecessary steps or components from a process.

Enhancement can increase productivity, value, and safety.

Definitions (continued)**Elements**

EWP is based on five elements: line management ownership, organizational diversity, graded approach, worker involvement, and organized communication.

Performance Indicators

The qualitative and quantitative basis by which objectives are established and performance towards reaching a goal is assessed and gauged.

Workers

Workers are the people involved in the work process. They are the people who carry out the steps of the process and/or who are impacted by the process. Consider workers to include crafts people, safety professionals, medical professionals, specialists, individual contributors, and management.

Key Elements

Line Management Ownership - Enhanced Work Planning cannot be imposed on line management. It must be sponsored by line managers who accept responsibility for safety, health, and quality assurance. Successful EWP projects are characterized by managers with a positive attitude about safety and quality, who seek out the organizational support necessary to implement EWP tenants, and have the leadership skills, knowledge, and authority to use EWP to improve their programs.

A *Graded Approach* to work management, based on risk and complexity-varying levels of hazards and hazard control dictate that not every work task requires the same degree of rigor in planning and execution. EWP helps sites develop criteria for determining which tasks can be performed better, faster, and cheaper by relying on skill of the craft. Tasks such as routine maintenance may benefit from team planning to facilitate coordination of resources but do not require the same degree of scrutiny as complex nonroutine tasks.

Worker Involvement beginning at the earliest stages of work management-"Worker" refers to everyone with a role in accomplishing work. The unique perspective of line workers injects "reality" into the work management process as no other member of the planning team can. Furthermore, the quality of work performed often parallels the degree of ownership experienced by workers. Workers morale improves when the value of their opinions and expertise is demonstrated.

Organizationally Diverse Teams - Work management teams consist of planners, engineers, workers, safety and health professionals (including radiological controls specialists, if appropriate), training professionals, and line managers.

Organized, Institutionalized Communication - Considerable time and money can be saved by building upon existing, successful programs. Sites that are initiating pilot projects benefit from the programs and lessons learned at sites with existing, successful EWP programs. Sites ready to migrate their pilot project to additional areas onsite can share strategies and approaches with other sites in similar circumstances. Programs, procedures, software tools, and training courses are freely shared among EWP sites to minimize duplicative efforts and maximize resource utilization.

Course Goal

Train the EWP Core Team members on the elements of Enhanced Work Planning and how to implement them to identify, evaluate, and improve the work requesting/planning/execution process.

The Core Team will understand that EWP is NOT the process which plans the actual work but IS the process that evaluates and improves the program by which we manage the planning and execution of work.

Course Objectives

At the completion of this training, designated EWP Core Team members will be able to:

Discuss the history of the EWP program and how EWP relates to the mission of their facility.

Discuss why they were selected to be a part of the EWP Core Team and how to effectively function as a team member.

Demonstrate how the five elements of EWP relate to implementing EWP using a case study exercise which requires enhancement of the described work process.

Describe common barriers to efficient and effective implementation of EWP.

Discuss EWP products, practices, and tools developed at other facilities or sites.

Discuss the effective use of performance indicators.

Describe their role as mentor/coach in implementing and refining EWP at their site.

Discuss how to determine when EWP elements are institutionalized at their facility.

History

Prior to Enhanced Work Planning, the process used to plan work was generally performed by a single individual with little interface with support organizations or the work force other than to seek approval. Regardless of their good intentions or training, one individual planning the work could not possibly foresee all possible approvals, stop points, permitting, etc. for every job. This process created incomplete, confusing, inaccurate, and inconsistent work packages or work instructions. Efforts to "front load" all possible work contingencies into every package led to exceptionally lengthy work packages and unnecessary requirements. This was a direct result of a lack of understanding of what was to be done, when, by whom, and with whose permission. There was no consistent coordination of support organizations or required worker qualifications. All this led to delays and stoppages in work execution and a lack of faith by the craft or wage in safety analysis programs and the entire work control process.

Although started as a DOE Initiative, Enhanced Work Planning has evolved into a "grass roots" initiative championed by the sites and facilities who initially piloted it. Although not mandatory by any present DOE Order, EWP continues to grow throughout the complex because, over time, its use promotes safer, faster, and cheaper work planning and accomplishment.

In today's environment of shrinking budgets and changing missions, we can ill afford any inefficiencies. Experience, past productivity, and safety excellence help separate us from privatization but, the gap is narrowing.

We have to find better, more cost-efficient, and safer ways to conduct our missions. Enhanced Work Planning is one of those ways.

Core Team Roles and Responsibilities

Although the name may seem misleading for this section, your role and the responsibilities of your team to implement EWP is what this module is designed to teach. The Instructor will lead you through an entire Implementation process using an example situation. As each part of the implementation process is discussed, your role in accomplishing it will also be discussed, along with addressing the step in terms of one or more of EWP's five key elements.

Facility A Case Study "AS-IS" Narrative

Problem: All manner of excess equipment continues to "pile up" at various informal "dump" sites all over the facility.

Process: In order for anything to move on the facility, the requisitioner must call one of twenty different coordinators depending on the material in question. Few, if any, people at the facility know who to call for every instance. Often personnel with knowledge of special handling requirements for such things as explosives have been moved out of the area of concern. Necessary paperwork is a function of no less than twelve different administrative systems and is driven by the special handling precautions needed for a specific material. Frequently, movers are dispatched to enact a move but, the paperwork is not correct and the move results in a "dead run." Worse yet, incidents have occurred involving improper handling and storage of radioactive and hazardous materials as well as cases of oversized equipment being mishandled. The transportation dispatcher which handles the move calls is overloaded and customer complaints are rising steadily.

Implementation Process

Perform "AS-IS" Review

Multi-functional team members conduct interactive discussions of work processes to gain understanding of how work is currently being performed. The important idea here is "currently" or REALLY-IS vice what it is supposed to be. Scope of the review addresses how work is identified, planned, approved, controlled, and executed.

AS-IS review may be accomplished by:

- Team meeting of representatives
- Developing checklist and interviewing personnel
- Reviewing assessment reports
- Reviewing employee suggestions

Core Team Roles and Responsibilities (continued)

Determine Strengths and Weaknesses

- Critically evaluate information on how work is accomplished
- Identify effective practices
- Identify barriers to efficient completion
- Identify organizational interfaces and understanding of procedures and practices that impact the completion of work

Determine Whether Process Enhancements are Warranted

Based on the team understanding of the strengths and weaknesses and the potential for meaningful, worthwhile improvements, the team decides if the existing process should be enhanced. The team needs to consider the potential benefits of changes versus the costs to implement and the disruption factor.

Set Goals and Develop Performance Indicators

Once the team has determined enhancements are warranted, the present process must be baselined to provide a starting point to set goals from and tie Performance Indicators to. The team then establishes goals for the enhanced process to address opportunities for improvements in:

- efficiency
- productivity
- safety
- environmental compliance
- hard dollar savings

Benchmark Current Conditions

The EWP team compares current practices with similar practices at other complex organizations in order to note how others have dealt with similar issues. Successful tools and processes developed through EWP at other facilities are reviewed for possible application. Consult the EWP Cross Pollination Document Summary and contact personnel at other sites to discuss experiences.

Determine "SHOULD-BE" Process

The EWP Team determines what characteristics and requirements the enhanced process should possess incorporating EWP elements including a graded approach based on risk and complexity of the task and the skill/training level of the workers.

Core Team Roles and Responsibilities (continued)

Develop Implementation Plan

The EWP team develops an implementation plan and schedule including required resources and implementation costs for management review and approval. The plan identifies the responsible lead person and other resources for completion of the actions defined in the plan. Items such as procedure changes, development of tools, and training on changes need to be considered.

Implementation Enhancements

Using the approved plan, the changes to the work process are implemented in the field including the required training of personnel. Depending on the complexity of changes, it may be appropriate to pilot changes in one area to validate the process before full scale implementation. The same team that developed the changes should assist with the implementation.

Evaluate Effect of Process Changes

The EWP team participates in evaluating the process changes using information from performance indicators. By comparing results from the new process to the previous baseline condition, the effect of the changes are evaluated and further process improvements can be considered.

Closure

The EWP process is considered completed when the enhanced process implementation is finished and the line management accepts full responsibility for the process. The on-going performance continues to be monitored by the performance indicators and management uses self-assessment for identifying need for future enhancements.

Team Development

This section discusses team development and dynamics. It is not intended to provide structured team training. Four stages of team development will be briefly discussed along with a discussion on factors affecting team effectiveness. Your Team Leader has been provided with a Team Training "Toolbox" which goes into greater detail on team effectiveness factors including exercises to help your team with any teamwork problems that affect your ability to work together as a team.

Casey Stengel, a famous professional baseball manager from long ago, once said *"You can get good players, gettin' them to play together, that's the hard part."* Teams are not fully effective when they first come together.

Stages of Team Development

Forming (Stage 1) - In the early stages of team development, team members may be unsure of the team's goals and objectives, and uncertain of the role they will play in achieving them. They have questions about their level of involvement, how they will like working with the other members of the team, and how their ideas will be received by others.

In Stage 1, team members need help identifying their mission, goals, and objectives. They may also need help establishing their team processes and team norms. Leadership of the team in Stage 1 is primarily provided by the team leader.

Storming (Stage 2) - Team members are becoming more comfortable as a member of a team and are more willing to express themselves and their ideas. They are beginning to take responsibility for more of the team interactions and feel more ownership of team decisions. However, there may still be confusion over team goals and roles on the team, especially if these issues were not resolved in Stage 1. It is during Stage 2 that team members may more openly express their differences of opinions or frustrations with the challenges of working on a team. This stage may include more disagreement and conflict among team members, or the expression of frustration by individual team members.

In Stage 2, team members need to establish norms for how they will work together, how they will resolve differences, and how they will support each other's needs on the team. Team members may begin to take on some of the leadership responsibilities, but will still look to the team leader for guidance through these rough waters.

Norming (Stage 3) - As teams progress to Stage 3, they have established their goals and objectives, as well as resolved the major issues related to how they will work together to accomplish those goals. In stage 3, the team is becoming more productive in using the processes of teamwork. They are establishing procedures and adopting methods for solving problems and

Team Development (continued)

making decisions. Leadership responsibilities (such as running meetings, promoting open dialogue on issues, facilitating decision making, supporting team members needs, managing conflict, and communicating with stakeholders) are becoming shared by all members of the team.

Performing (Stage 4) - Period of time during which the team is most productive. Team members work collaboratively toward the team objectives. Team leadership is shared, team members recognize each other for their contribution, and team successes are celebrated. While changes in the team's goals, membership, or leadership may temporarily inhibit the team's effectiveness, team members have developed skills in teamwork to manage these setbacks and get back on track.

Team Effectiveness Factors

Goals and Objectives: In order for a team to operate effectively, it must have stated goals and objectives, and team members must be committed to reaching goals. Time spent setting goals and objectives early in the team's development will enhance the team cohesiveness and focus.

Utilization of Resources

Team effectiveness is enhanced when every member has the opportunity to contribute and when all opinions are heard and considered.

Trust and Conflict

Any time a group of people work together, there is an opportunity for disagreement and conflict. For a team to reach an optimum level of performance, they must learn how to manage conflicts effectively by developing a climate of openness, respect, and trust.

Leadership

In the early stages of team development, team members may look toward the team leader to direct the team on task functions, such as initiating discussion, clarifying issues, and checking for consensus; as well as guide the team maintenance functions, such as drawing everyone into the discussion, mediating conflict, and supporting and motivating the team. But, as the team develops, the responsibility for these team leadership functions becomes a shared responsibility among the team members.

Team Development (continued)

Control and Procedures

As with any organization, a team needs some element of control and procedures to guide its activities, such as a meeting agenda, minutes, and action plans. Involving the team members in establishing the team norms and procedures builds commitment and cohesion among the team members.

Interpersonal Communications

Effective team development depends on the ability of team members to communicate with one another in an honest and open manner. Team members clearly assert their ideas and listen openly to others thoughts. Team members participate freely in the discussion.

Problem Solving and Decision Making

Effective teams have an agreed upon approach to identifying problems, evaluating potential solutions, and making decisions. The lack of an agreed upon approach can result in wasted time, misunderstandings, lack of commitment to the decision, and poor quality decisions.

Experimentation/Creativity

While it is important for teams to have agreed upon approaches to problem solving and decision making, a part of those processes should include looking for new ideas or new solutions to the task. This is the synergy that comes from the various team members sharing ideas and building upon each other's ideas to come up with new, even better, approaches. Effective teams utilize brainstorming, alternative possible solutions, and other methods of generating creativity and synergy on the team.

Evaluation

Even the most effective teams need to stop occasionally and check how they are doing in accomplishing their tasks and how they are functioning as a team. This evaluation or critique can help the team pinpoint and correct factors that are preventing them from being fully effective.

Case Study

In this section, the team will be given another case study to evaluate for enhancement. Your Team Leader is expected to lead you through this section and accomplish the same results.

AS-IS Work Planning Process Narrative

Work Requester contacts Data Entry Clerk (DEC) who receives the work order request and assigns a work order (WO) number.

The DEC forwards the WO to the Planner/Estimator (P/E).

The P/E reviews the work description and defines the work scope based on description and individual experience. If the P/E doesn't understand the work required, he/she contacts the requestor for additional information and clarification.

After the P/E understands the work description, he/she walks down the job and talks to the Facility Supervisor to define the work scope. This includes determining the need for permits and other permissive requirements.

After identifying the work scope, the P/E estimates the job. This includes ordering needed materials and supplies and estimating man-hours through discussions with maintenance supervision. The P/E then develops the work instruction which includes hold points, special tools, and post maintenance testing.

The P/E then develops permits and seeks approval which typically requires contacting each permitting authority individually. The P/E attaches the approved permits and other work instructions to the WO to create a work package.

The work package is forwarded to the Scheduler to schedule the identified task.

Implementation Process

Your Team Leader will now take you through the implementation process for the sample case study. Note taking space has been provided after each step of the implementation process.

AS-IS Review

Strengths and Weaknesses

Enhancement Determination

Baseline, Goals, and Performance Indicators

Benchmark

SHOULD-BE

Implementation Plan

Implement

Evaluate

Closure

Teamwork Evaluation

After your Team Leader presents your enhancements, you will be given an opportunity to discuss your evaluation of how your group functioned as a team during this case study exercise. The

Instructor will also provide feedback on your group's teamwork.

Teamwork Evaluation

Barriers to Effective Implementation of Enhanced Work Planning

In this section, we will discuss how to overcome barriers to EWP using a provided list of actual barriers and barriers volunteered from the class. Room has been provided to take notes on overcoming specific barriers. Remember, when confronted with a new barrier, try applying the five elements of EWP to help remove or control it.

Barrier

Solution

"Stovepiping"

"Rice Bowl"

Line Management Ownership

Middle Management (Sponge Level)

Prevailing Culture

Perceived Funding Requirements

The Way It Has Always Been Done Here

Resistance to Change

Conflicting Programs

What's In It For Me?

Too Frequent Management Changes

Enhanced Work Planning Practices, Products and Tools

Ongoing communication and networking are critical to ensure that sites experience the full benefits of EWP applied to all work performed within DOE. Many tools and processes are available which enable sites to achieve work results faster, better, safer, and cheaper.

The *EWP home page* makes EWP information available to countless people across the DOE complex. New information will be added regularly. You should check this site out often.

The *EWP Implementation curriculum* is focused on understanding and applying key EWP elements as well as providing an avenue for each site to tailor the curriculum to meet its specific needs.

Periodic and regularly scheduled *teleconferencing* meetings are held to provide a forum for topics of general interest.

The *cross pollination summary* in this section is a matrix of tools, products and practices found at other sites. The matrix is easy to use, your instructor will demonstrate the use of the matrix.

The EWP Steering Committee sponsors *periodic EWP counterpart meetings and workshops* for more intensive interaction among EWP site representatives.

Assistance from *EWP specialists* is provided to ensure that sites are taking full advantage of the various aspects of EWP.”

It is important to keep the *information flow going both ways*. As you come up with new products, tools, or processes, please share them with the rest of the complex.

ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document

Name of Work Product*	Status	Responsible Site**	Sites with Similar Products	Description
Work Identification and Prioritization				
Revised Maintenance Work Request Form	Final	FN		This new form provides space for support groups to input information regarding the request. This results in an improved accuracy for the tracking of maintenance work request.
Integrated Safety Department Risk Assessment Priorities with the Maintenance Programs	Final	MN	LANL	Four safety risk assessment codes (RAC's) were integrated into the maintenance service request (MSR) priority system to provide an enhanced tracking system for safety related work.
Master Priority List with Site Building Managers	Update Weekly	MN	FN, LANL	Newly developed priority identification system used to assist in planning and execution of work. Building manager provide a weekly priority update of their MSR's in the system which is then used by maintenance planners and schedulers to guide their work effort.
Rollback Optimization Model	Final	SR		Prioritizes all contaminated areas onsite and optimizes the clean up of these contaminated areas by utilizing a proven computer based decision making process that optimizes resources and dollars.
Lifecycle Costing	In Progress	SR		A program is being developed which will look at the life cycle costs associated with the disposal of all waste streams at the various approved treatment storage and disposal (TSD) facilities. This costs will be used for future planning of work that will use taxpayers moneys more efficiently.
Hazard Identification and Analysis				
ES&H-ID Review Process	Final	LANL		The ES&H-ID review process is designed to provide uniformity in operational risk management across facility management units, programs and processes throughout the Los Alamos National Laboratory. It provides a formal, systematic, and documented approach for risk identification and hazard management and provides safety, health, and environmental review of operations of Laboratory facilities. The process is supported by a web-based tool.
Logistics Questionnaire	Final	RL		Applies a process for job hazard analysis (JHA) using automated tool that facilitates hazard identification, integrates appropriate ES&H support disciplines, and establishes appropriate level of planning and documentation required. Automated JHA is available to others.
Integrated Hazard Analysis Process into Work Planning	Final	RL		Automated pop-up sheets associated with the JHA provide the worker and other work planning team members (non-S&H professionals) with key into to identify hazards and take appropriate action for controls.

*Responding to document requests may involve protection of proprietary information.

**See attached listing for current contacts.

ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document (cont'd)

Name of Work Product*	Status	Responsible Site**	Sites with Similar Products	Description
Implementation Requirement for Hazard Analysis and Control for Facility Work	Final	LANL		Defines the requirements for appropriate site and task hazard identification and analysis for use by facility management organization in conjunction with the facility management work control process. Incorporates a two-tier approach that permits initial screening of site hazards to be performed by facility management personnel not having extensive ES&H training, thus reducing cycle time for processing low-hazard work.
Work Permit/Package Personal Protection Sheet	Final	FN		Use of this sheet eliminates inaccuracies, inconsistencies, and improper interpretation of personal protection requirements.
Activity Hazard Analysis for Supervisor's Hazard Briefings	In Review	OR		Developed activity hazard analyses (AHAs), which are being assessed for use for routine and nonroutine operations. The AHAs are intended to be used as a tool for the supervisor to brief the workers on the safety hazards and protective measures applicable to an assigned task.
Computerized Work Planning Program	In Review	OR	FN, LANL	Developing a computerized work planning program that will allow for identification of the permits and requirements that are applicable to a task and provide for electronic coordination of the activity being planned.
Hazard Identification and Control Aids	Final	RL	LANL	Guidance document provides framework for applying skill-of-the-craft in planning and conducting work. Serves as a basis for a graded approach based on risk and complexity of work.
Employee Job Task Analysis	Final	RL	FN, MN	Process and tool for risk-based medical qualifications exams and medical monitoring. Automated tool compiles physical job requirements, hazards, exposures, and overall risks to provide a basis for proper placement of employees into medical surveillance programs.
Work Order Screening Checklists for Hazard Revisions	Final	MN	LANL	These two checklists provided a means for the building manager and core team to determine accurately whether a maintenance service request required core team review and, if so, which documents were required in the final work package.
"Manual" Job Hazard Analysis Checklist	Draft	RFETS	Hanford	This JHA checklist is a manual version derived from several other sites within the DOE complex. It allows the working teams to complete the checklist at the work site rather than at a computer away from the work site. It serves as a basis for a graded approach based on risk and complexity of the work.
Work Planning and Scheduling				
Skill of the Craft Guidance	Final	RL	FN, MN, Y-12	This guide provides a basis for using the skill of the craft during work planning and performance. The principles in the guide can be applied to the wide range of tasks and work environments found at Hanford.
Standing Work Package	Final	OR		A craft-friendly method of processing skill-of-the-craft-type jobs.

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ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document (cont'd)

Name of Work Product*	Status	Responsible Site**	Sites with Similar Products	Description
Equipment Inspection/ Scheduling	In Pilot	OR		An equipment database used to schedule PM, calibrations, and inspections for all organizations at the Y-12 Site.
Planner's Guide	Draft/ Revision	OR		A comprehensive guide to planning and coordination of maintenance jobs.
Model to Automate Linkage of S&H Organization with Work Control Procedures	Final	FN	LANL	This conceptual model ties three computer systems together to provide defensible data regarding workers location, length of time at a task, permits required, and the types of exposures.
Master Schedule for Maintenance Activities	Final	FN	MN, LANL	An electronic master maintenance schedule that allows support groups more time to schedule support services and reduce nonplanned work activities. This process significantly reduces the time required by planners and estimators to generate schedules.
Maintenance Operating System Manual	Final	FN	MN, LANL	The document compiles procedures needed by the maintenance departments managers and supervisors. Procedures are now in one convenient place as a result of old and outdated documents being updated and the addition of new documents.
Fermco Annual Maintenance Work Plan	Final	FN	LANL	Describes the process and program for identification, planning, approval, and execution of maintenance work at Fernald. Called for in the performance objective criteria requirements.
Work Coordination Center Procedures	Final	FN	LANL	The work coordination center procedures document the practices and methods for managing and operating the maintenance work request/order approval process.
Prejob Planning Worksheet	Final	OR	MN, LANL	Developed a prejob planning worksheet for nonroutine operations to facilitate the planning process by ensuring critical elements are identified early in the planning process (e.g., equipment to be used, safety documents applicable to the project, craft personnel required for the tanks, planned start date and time).
Maintenance Skill of Craft Control Requirements	Under Develop ment	LANL	RL	A document that defines maintenance skill of craft as used at Los Alamos and establishes the mechanism for controlling a maintenance skill-of-craft task list to ensure that the tasks included on the list are properly reviewed, approved, and distributed to the users. This control ensures that Davis-Bacon considerations are met, tasks on the list meet the institutional definition for maintenance, and work safety is adequately addressed.
Labor Availability Forms for Determining Labor Resource Allocation	Final	MN	LANL	Forms used to reflect radiological control technician (RCT) resources available to support maintenance activities. Used as a planning tool in the preparation for weekly scheduling meetings involving work requiring RCT support.

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**See attached listing for current contacts.

ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document (cont'd)

Name of Work Product*	Status	Responsible Site**	Sites with Similar Products	Description
Weekly Job Scheduling Forms	Final	MN	Y-12, LANL	Forms used to schedule the next week's maintenance jobs; used in conjunction with the RCT labor availability form for determining resource allocation.
Standardized Work Package for Confined Space Entry	Final		LANL	Confined space entry and other high hazard work posed unique requirements that were streamlined through development of standardized work packages. The confined space package was the first designed specifically to meet these requirements and resulted in a more streamlined planning process.
MSR Guidance for Low/Moderate/High Hazards	Current	MN	LANL	Same as name of work product.
Job Requirements	Final	ID		Interactive, computer-based tool to assist the work order preparer in streamlining work package development and approval. Used by all personnel trained and authorized to prepare work packages at the ICPP. Consists of a series of logical questions for use by the responsible person (normally the plant engineer) to determine what technical advice, reviews, or approvals each organization needs to provide for work packages at ICPP. Ensures that the appropriate support organizations are contacted for advice or approval regarding hazard recognition and mitigation, personnel safety requirements, and regulations to be addressed for safe and correct job execution and ensures that all requirements are addressed.
Integrated Scheduling System and Training	Final	ID	LANL	Standardizes and combines all activity and resource data into one common database. Allows coordination of activities among Engineering, Planning, Procurement, and Operations and Maintenance to fulfill ICPP schedule commitments. The three major components of the ICPP Integrated Scheduling System are the integrated database, the plan of the week, and the plan of the day. Resource needs (e.g., personnel, common-use equipment, outage requirements) are forecasted, and activity and resource conflicts are resolved.
Work Execution				
Guidance for "Light Work" RadCon Permit Use	Final	FN		These guidelines minimize improper use of this general radiation work permit.
Field Analysis for Prejob Safety Briefings	Planned	OR	MN, LANL	Implementing a field analysis checklist to assist the supervisor in thoroughly conducting prejob safety briefings to craft personnel.
Postwork Data and Lessons Learned				
Worker Delay Code Identification Card	Final	MN		A delay card is carried by workers to identify the cause of a work delay. The codes may vary as more is learned about delays or prior delays have been resolved. Indicated delays are used to improve the conditions in future work.

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ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document (cont'd)

Name of Work Product*	Status	Responsible Site**	Sites with Similar Products	Description
Job Package Improvement Process	Final	OR		A process requiring random sampling of job packages for review and mentoring purposes.
Delay/Comment Card	Final	OR		A craft-friendly method of obtaining delay and comment information about maintenance jobs.
Electronic Transfer for IH Data to Medical providers	In Process	OR		An improved reporting format for providing occupational health and safety data to the medical providers. Upon finalizing the reporting format, the next step will entail developing electronic transfer capabilities from the Industrial Hygiene Analytical Sampling System (IHAS) to the Medical Occupational Hazard Information System (MOHIS).
Metric Graphs for Cycle Time Reduction and Schedule Success (Performance Measure)	Periodic Update	MN	LANL	<ul style="list-style-type: none"> • Average days to complete an MSR (graphed monthly) • Percentage of scheduled jobs actually worked (graphed bimonthly) • Supplemented by training graph of percentage of "no shows."
Performance Measures for Maintenance Activities	Draft	ID	FN, LANL	Performance indicators were developed to monitor performance of the enhanced work control system. These indicators measure cost effectiveness, quality, and customer performance.
"EWP Updates" Newsletter	Final	RFETS		This newsletter is a series of periodic status reports that summarize the activities and progress towards a more effective work management process. Available on the Rocky Flats EWP homepage.
General Work Process and Program Controls				
Work Control Training	Final	OR		A training course covering all phases of work control, plan, schedule, execute, post maintenance testing, and completing the maintenance job.
Health and Safety Procedures to Reflect Changes in MT-0003	Final	FN		These procedures document the enhanced role of the health and safety groups in the maintenance work request process.
Computerized Maintenance Management Systems (CMMS) Procedures	Final	FN	MN	The CMMS system procedures for managing maintenance activities establish the roles and responsibilities for personnel supporting the decentralization and use of the CMMS system. There also are standard guidelines for the use of CMMS in project and nonproject activities.
Fermco Electronic Work Package and Training*	Final	FN	MN	Automates the maintenance work request system with features such as electronic routing, electronic approval, manager alerts, electronic attachment of drawings, and photos.

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**See attached listing for current contacts.

ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document (cont'd)

Name of Work Product*	Status	Responsible Site**	Sites with Similar Products	Description
Maintenance Program Procedure (MT-0003)	Final	FN	MN, ID, RL	A new maintenance procedure for the processing of maintenance requests (MT-0003) consists of a consistently formatted, detailed description of each discipline's duties as they relate to the integrated planning process.
Maintenance Implementation Plan	Final	FN		A maintenance implementation plan that reflects the method of performance of doing business in the area of maintenance at Fernald in compliance with applicable requirements.
Maintenance Work Control System Procedure (FM-MO-001)	Under Revision	MN	FN, Y-12, LANL	A newly developed work control procedure to control maintenance activities formally. The procedure defined the program to control maintenance activities and outlined requirements for ensuring work is performed in an efficient, safe manner to provide reliable systems and well-maintained facilities.
Process Flow Diagrams for Overall Maintenance Program and Selected Maintenance Activities	Final	MN	FN, LANL	Individual activity flow charts used to identify existing process steps within the facility maintenance program and to simplify initial review of recommended changes.
Maintenance Work Control Procedure	Final	ID	FN, Y-12, LANL	Incorporates a revised work order priority rating system that provides a tool for facility management to identify required work and then efficiently process work orders through the work control system. Environmental, safety, and health issues and compliance and operational issues are considered in scheduling resources in concert with the integrated schedule.
Implementation Requirement for Facility Management Work Control	Final	LANL	INEL, MN	Defines the requirements for a comprehensive work control process for facility-related work for use by the Laboratory's facility management organizations. Provides uniformity for institutional processes across autonomous facility management organizations. Incorporates grading and skill-of-the-craft.
Rollback Handbook	Final	SR		Handbook developed to provide guidance on work planning for controlled area rollbacks. Addresses— <ul style="list-style-type: none"> • Obtaining management sponsorship • Identifying the individual and organizational roles and responsibilities • Identifying potential areas to be included • Conducting a hazard identification presurvey • Performing cost benefit analysis • Defining facility approved protocol • Training personnel • Obtaining materials and equipment • Implementing plan • Lessons learned

*Responding to document requests may involve protection of proprietary information.

**See attached listing for current contacts.

ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document (cont'd)

Name of Work Product*	Status	Responsible Site**	Sites with Similar Products	Description
Waste Generator Permit System (Low Level Radioactive Waste)	In Progress	MN	LANL	Permit establishing conditions for generators to prepare disposal ready waste for transfer to the Waste Management Department for shipment to disposal site. Preestablished requirements eliminate legacy waste. Elements: Waste generator permit policy, waste generator permit procedure, waste generation permit, waste generation permit, <i>Waste Generator Permit Users Guide</i> , and Waste Permit Steering Committee.
Rollback Handbook Volume II	Not Started	SR		A Volume II of the Rollback Handbook is anticipated being published to cover additional items that were omitted in Volume I. Volume II will focus on new technologies and work maintenance activities as well as exporting these technologies throughout the rest of the site and complex.
Pantex Plant EWP Information Kit	Final	Pantex		Concise user guide to starting and working an EWP Project
Minor Maintenance Work Control	Final	Pantex		Describes the route to use in processing minor maintenance work request
Facilities Division EWP Charter	Final	Pantex		Written document with authorization signatures to incorporate EWP concepts and philosophies into all work order packages
Work Provider Work Control Process	Final	LANL		This procedure (developed by support services subcontractor, Johnson Controls Northern New Mexico) meets the requirements stated in the Laboratory implementation requirements for facility management, work control, and hazard analysis and control. It addresses planning, scheduling, coordination, and execution of work performed by the subcontractor.
EWP Pilot Program Implementation Instruction	Final	RFETS		SSOC & RMRS have issued separate but identical instructions to identify the approach for implementation of EWP concepts within their applicable organizations. This instruction identifies the communication network necessary for proper implementation, along with tools used by the various working teams. This instruction is available on the Rocky Flats EWP homepage.
Maintenance Work Package Planning Process	Final	RFETS		This procedure describes the sitewide process for Responsible Facility/Maintenance Managers or Designee to plan and approve work packages and standard work packages using a graded approach for maintenance or modifications to structures, systems, and components. This procedure is in the process of being revised to include the manual JHA checklist along with skill-of-craft definition and job hazard identification for routine minor work.

*Responding to document requests may involve protection of proprietary information.

**See attached listing for current contacts.

ENHANCED WORK PLANNING PRODUCTS ---Cross Pollination Document (cont'd)

Site	Name/E-Mail	Phone/Fax
Brookhaven	John Taylor <i>jtaylor@bnl.gov</i>	516-344-7005 -3957 fax
Savannah River	Jack Bernard <i>Jack.Bernard@srs.gov</i>	803-725-7416 -7482 fax
Mound	Jon Yonko <i>yonkjd@doe-md.gov</i>	937-865-3151 -5066 fax
Fernald	Jim Trujillo <i>jim.trujillo@fernald.gov</i>	513-648-4419 -4417 fax
Oak Ridge, ETP	Lou Tanner <i>lt@ornl.gov</i>	423-576-0390 574-5037 fax
Oak Ridge, Y-12	Ray Smith <i>srd@ornl.gov</i>	423-576-7781 574-0606 fax
Pantex	Skipp Maas <i>smaas@pantex.com</i>	806-477-5846 -3448 fax
Rocky Flats	Barbara Swenson <i>barbara.swenson@rfets.gov</i>	303-966-5794
Los Alamos	Joe Frank <i>jfrank@lanl.gov</i>	505-667-6072 -8136 fax
Idaho	Mike Duffy <i>jduffy@inel.gov</i>	208-526-7335 -4337 fax
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Performance Indicators

Although they are referred to as indicators, measures, or metrics; Performance Indicators, as defined and used in the Enhanced Work Planning process, are the "**qualitative and quantitative basis by which objectives are established and performance towards reaching a goal is assessed and gaged.**"

Regardless of what they are called, it is what they do for us that is important. Performance Indicators help us control the process. We must have a means to tell if we are safer, faster, better, cheaper or as importantly, if we are not.

Performance Indicators **measure and defend progress**, show **support and integration** into Site and Complex-wide missions, **provide data** to set an improvement course, and ultimately function as a **tool to change behavior**. Taken alone, Performance Indicators are meaningless, they must be carefully tied to an attainable goal and expressed in units of measure that are understandable by everyone associated with the process.

Performance Indicators are an important part of the EWP program. They are used in many ways to judge progress towards goals, such as:

1. **Management Assessment**—Is EWP meeting its objectives and goals? Is there clear evidence of the application of the elements of EWP? Is it paying for itself? (Fernald experienced an 11 to 1 payback on resources expended on EWP)
2. **Defensible Measurement of Success and Accomplishment**—"Nothing succeeds like Success" Meaningful PIs can prove that the EWP program is accomplishing its goals.
3. **Self-Assessment**—How well are our "enhanced" processes meeting their goals? Are they truly safer, better, faster, and/or cheaper?
4. **Continuous Improvement**—What are the weaknesses, trends, efficiencies, and opportunities for improvement?
5. **Show Integration into other Site/Complex goals and/or initiatives**—EWP PIs should support other PIs used to measure the Site's performance such as an ISMS.

Each ISMS should include a process to identify performance measures including safety performance measures for the work. These performance measures should 1) Provide information that is truly a direct indicator of how safely the work is being performed 2) be clearly linked to the performance objectives and 3) be performance based.

An example might be an EWP Indicator measuring "worker involvement in work planning" should be shown as linked to a more established site indicator such as "maintenance cost per square foot."

Classic EWP Performance Indicators	Specific Example
Cost Avoidance	11:1 payback for investment in EWP, resulted in cost avoidance of \$7.6 million
Reduce Backlog	33% reduction in sitewide maintenance backlog
Decrease cycle time	46% reduction in maintenance request cycle time
Decrease injury and illness rates	21% reduction in personnel accidents and reportable events with a corresponding 36% increase in worker productivity
Increase involvement of Safety and Health personnel	100% increase in work reviewed by S&H personnel
Increase productivity	66% improvement in time required to complete work activities associated with packaging, managing, and shipping waste

Performance Indicators are used by virtually everyone at the facility.

-Site Management determine status of "global" processes such as implementation of VPP, D&D 25% of Site by 1999, reduce loss-of-time accidents, reduce equipment downtime by 25%, eliminate work stoppages due to work package errors or omissions, etc. Any of you who have been in any of these Managers offices can attest to the fact that his/her walls contain PI charts indicating progress towards corporate goals.

-Line Management determine status of facility or work group specific processes such as: reduce "dead time" for crafts by 10%, reduce D&D costs for facility A by 15%, reduce number of unforeseen field changes to work packages by 50%, increase "chargeable" time for workforce by 25%/reduce overhead charges by 25%, etc. Here again we will find PIs being tracked on charts in the foreman's office only more facility specific.

-Crafts determine status of worker specific processes such as: manage reportable workplace accidents to zero, reduce work stoppages by 75%, reduce number of crafts maintaining asbestos worker qualification by 10%, reduce average time to effect needed work package changes by 25%, etc. The PIs associated with the Crafts typical show up site wide with large signs or entire bulletin boards indicating progress towards goals such as reduced workplace accidents.

-Support Organizations-determine degree of involvement and/or support of the actual work by organizations such as Safety&Health, Medical, QA, and training. Here we could see: # packages reviewed by Support Organizations, # unforeseen work stoppages, # work packages requiring training involvement, reduce average size of work packages by 35%, reduce amount of annual retraining required by 25%, etc.

The bottom line is **EVERYBODY** uses PIs or should use or be aware of how their job affects PIs.

However, many of these examples can be a double edged sword. As an example, we may have to make work packages longer if we discover we are not applying the right amount of rigor for the hazards involved. To prevent these type situations, PIs **MUST** be tied to attainable goals!

Performance Indicators are established using the following basic outline:

1. Establish **baseline**-You have to know where you are before you can begin comparisons. Caution: Be sure you obtain an actual baseline, not what it is supposed to be.
2. Identify the **purpose** for the measurement-Why is this data being taken, do we really need it?
3. Justify and set **goals**-What are we trying to prove/disprove? Why are we concerned with this goal?
4. **Scope** of Indicator-What are we going to gather data on? How much data?
5. **Collect** data-must be defensible, with the proper rigor applied through use of a graded approach to its importance.
6. **Calculate** data-reduce raw data to useable, defensible measurements.
7. **Analyze** data-measure actual results.
8. **Compare** actual results(measurements) to goal.

Based on your results, you are ready to continue, alter course slightly, or make major course change.

Not all performance indicators are as easily understood. Measurement of subjective performance, such as communications or morale, requires more care in the selection of the data to collect and careful evaluation of that data.

First of all, subjective PIs do not replace other PIs. Subjective Performance Indicators allow managers and the workforce to measure and understand attitudes and subjective conditions that could be used to provide leading information of EWP progress such as:

- Commitment to EWP implementation
- Management sponsorship of EWP implementation
- EWP communication of effectiveness
- Characteristics of a successful EWP program
- Customer satisfaction with EWP
- Cooperation between workgroups

These elements are often not included in information systems because of the difficulty of measurement. One of the tools developed at PNNL for use in the EWP process has made this type of measurement possible. This facilitated process helps build and measure subjective PIs, identify possible applications for this tool in the applicant's organization, and provide an outline of the steps in the process. Upon completion of the workshop, personnel will have developed a subjective indicator of interest to the group and will be able to apply subjective techniques in their organization for use in the self-assessment process, obtaining consensus, and other applications. Contact Headquarters (EH-53) for more information on the "fuzzy" performance indicator workshop.

Some examples of subjective performance indicators include: quality, innovation, communications, morale, and efficiency.

A DOE-HQ Initiative has been launched to help EWP teams take advantage of Performance Indicators as a means to advance EWP goals. The EWP program has taken the initiative to help coordinate, consolidate, and refine site Performance Indicator programs. Once coordinated, progress towards complex-wide goals as defined by ISMS, VPP, etc. becomes easier to measure. The needed data is already being collected at each site in various forms. Coordination of each sites data towards a national level will assist in focusing the efforts of the entire complex in the same direction.

Mentoring/Coaching

As members of the core team, you are never really "out of the picture." You will always be a Subject Matter Expert (SME). Mentoring and coaching is the avenue by which EWP becomes continuous improvement, thereby maintaining the new process. As team members you will continue to assist in implementation and refinement.

One of the reasons you were initially selected to be a team member was the respect your peers have for you. Your positive, can do, watch me attitude is extremely important to the continued implementation of EWP at your site and the entire DOE Complex.

You may be advocates of change, or SMEs to explain Internet access to information, or assist implementation into new areas/facilities, or as a former, experienced team member you may become new team leader. These are just a few of several ways you may continually be involved.

Closure

Enhanced Work Planning is a process for improving work planning. Once the work planning process has been enhanced and is working, EWP is not needed anymore and effectively becomes self-canceling. However, it is not that simple. While it is important that the enhanced process is "turned back" to Line Management, knowing when to "declare victory" is important. Closure of the EWP process must be followed by self-assessment to ensure continued success. EWP is in place and you are ready for closure when:

1. Line management has fully accepted ownership.
2. Elements of EWP are institutionalized.
3. Enhanced process and products are implemented.
4. Continuous improvement process is in place.
5. The EWP process is validated.

Even after the above items have been satisfied and Line Management has accepted ownership of the enhanced process, self-assessment may reveal more problems which could require reengaging the EWP team. The process cannot be left alone.

Future

Now, where do you go from here? What is your next step?

You are now at the beginning. You have been empowered to help make things better. But now is the time to get started and "think outside the box." Remember the nail exercise and how many thought "It can't be done!"

"Half of eight is four, or it could be three or zero if you 'break tradition' and don't accept anything as the 'norm.'"

Accept your selection as a Team Member as a challenge to make things better for everybody! Enhanced Work Planning works! But not by itself! You are the other half of the equation!

DEPARTMENT OF ENERGY
ENHANCED WORK PLANNING IMPLEMENTATION TRAINING
PARTICIPANT SURVEY

Thank you for your participation in the EWP Implementation training course. Your opinions and ideas form the basis for quality improvement for this course. They also prove invaluable in the development of new curriculum to meet the needs of the DOE community. Please take a moment to complete this survey.

Name: _____ **Date:** _____

Were the course goals and objectives clearly stated and were they achieved by the course?

Was the course presented in a logical, easy to understand manner?

Did the course meet your expectations?

Which part(s) of the course did you like the most?

Which part(s) of the course did you dislike?

Do you have any suggestions for improving the course?

Excellent Above Average Average Below Average Unsatisfactory

(Please circle your overall evaluation of the course)